

XXVI.—On the Insects of Jamaica. By PHILIP HENRY GOSSE.

[Continued from p. 202.]

39. *Calopteron bicolor*. On the trees at the forest-edge, on each side of the Hampstead Road, this *Lycus* was excessively abundant in June 1845 and 1846, particularly in the latter year. Hundreds, I should judge, were sometimes on a single small tree. They rested principally on horizontal branches from the height of ten feet upwards.

40. *Pygolampis xanthophotis** (mihi).

41. *Photuris versicolor*.

42 to 53. Twelve other species of *Lampyridæ*, all luminous.

The fire-flies of the tropics have been often described. The *Lampyridæ* are, in Jamaica, far more abundant than *Pyrophorus noctilucus*. At all times, their sparks, of various degrees of intensity, according to the size of the species, are to be seen, fitfully gleaming by scores about the margins of woods, and in open and cultivated places. *Photuris versicolor*, a large species with drab-coloured elytra, I found abroad soon after my arrival, in December. One flying around the house, in the evening, I was struck with its swift and headlong flight and nearly permanent luminosity, which was much more brilliant than that of any species which I had at that time seen.

The large *Pygolampis*, to which, for precision's sake (as I have a note concerning it), I have given a name, I did not meet with until May, when one flew into the house at Bluefields in the evening; and two nights afterwards I observed it rather numerous on the very sea-beach at Sabito. It was conspicuous for the intensity of its light, much exceeding that of *Photuris versicolor*. Sometimes it is only the last segment but two that shows luminosity, but when excited the whole hinder part of the abdomen is lighted up with a dazzling glare.

It is in the woods of St. Elizabeth's, in the month of June, that I have seen the *Lampyridæ* in their glory; and particularly along the road leading up the mountain from Shrewsbury to Content, where it is cut through the tall forest, which overhangs it on each side, making it sombre even by day, and casting an impenetrable gloom over the scene by night. The darkness here, however, and especially at one point, a little dell, which is most obscure, is studded thick with fire-flies of various species, among

* This fine species may be thus described. Length 9 lines; breadth $3\frac{1}{2}$ lines. Elytra smoke-black; thorax drab, the central portion dark brown; abdomen pale, the last three or four segments cream-white. Specimens in Brit. Mus.

which the two large ones above-named are conspicuous. I have delighted to watch and study their habits in this lonely spot, while the strange sounds, snorings, screeches, and ringings, of nocturnal reptiles and insects, sounds unheard by day, were coming up from every part of the deep forest around, giving an almost unearthly character to the scene.

Pygolampis xanthophotis is seen only in flight: its light is of a rich orange-colour when seen abroad, but when viewed in the light of a candle appears yellow. It is not of so deep a tint as the abdominal light of *Pyrophorus noctilucus*. It is intermittent.

Photuris versicolor is noticeable by its frequent resting on a twig or leaf in the woods, when it will gradually increase the intensity of its light till it glows like a torch; then it gradually fades to a spark, and becomes quite extinct: it thus remains unseen for some time, but in about a minute, or, it may be, two, it will begin to appear, and gradually increase to its former blaze; then fade again; strongly reminding the beholder of a revolving light at sea. The light of this species is of a brilliant green hue. I have seen a passing *Pyg. xanthophotis*, attracted by the glow of a stationary *Phot. versicolor*, fly up and play around it; when the intermingling of the green and orange rays had the same charming appearance as the two lights of *Pyrophorus noctilucus* noticed in the preceding part of this memoir.

The smaller species have, some yellow, some green light: I have noticed only these two colours in the luminosity of such *Lampyridæ* as I have observed.

Pygolampis xanthophotis, when held in the fingers, will frequently illuminate the antepenultimate segment of the abdomen, over which the light plays fitfully, sometimes momentarily clouded, more or less, but generally saturated, as it were, with most brilliant effulgence. This species occasionally comes in at open windows at night, but much more rarely than *Photuris versicolor* and the smaller kinds, a dozen or more of which may be seen almost every night, especially at Content, crawling up the walls or flitting around the room and beneath the ceiling.

At Content, in the latter part of July, I found in fresh-turned earth a larva of a *Lampyris*, small and lengthened: the abdomen was furnished with a retractile brush of divergent filaments, ordinarily concealed; but having no lens with me I could not examine it particularly.

54. *Nitidula* (sp. nov.). Found with a *Philonthus*, rather numerous, in the centre of decaying rose-apples (*Eugenia jambos*) on the Hampstead Road in June.

55. *Dermestes lardarius*. Probably introduced. Sadly abundant in the skins of my preserved birds, at all times.

56. *Helops* (sp. near *celestinus*). A single specimen found on

the ground, on Grand Vale Mountain, St. Elizabeth's, early in June.

57. *Diaperis*? (sp. nov.). Found at New Forest, near Alligator Pond, where the singular honey-combed limestone is the common rock. It was in December.

58. *Rhipiphorus* (sp. nov.). A single specimen taken in June, on the Hampstead Road: it was resting between two leaves of a shrub.

59. *Mordella* (sp.).

60. *Tenebrio* (sp.). Common under heaps of stones in Bluefields pasture.

61. *Upis* (sp. nov.).

62. *Attelabus* (sp. nov. very near *aureolus*, Klug). This pretty little insect was very numerous in June on the Hampstead Road, and it occurred also at the same season on Bluefields Mountain. We invariably found the specimens resting on the leaves of trees that overhung the road, and for the most part about ten or fifteen feet from the ground. They were apt to fall off on the slightest alarm. It has an odd appearance, as if it were but two-legged, from the great development of the anterior pair of legs. The spot on each elytron is golden during life, but after death fades to a dull drab hue.

[To be continued.]

XXVII.—*On the Habits and Geographical Distribution of Bulimus, a genus of Air-breathing Mollusks.* By LOVELL REEVE, F.L.S.

THE beautiful forms and varieties of shells produced by those air-breathing mollusks, which, under the generic appellation of *Bulimus*, constitute an important division of the great tribe of SNAILS, have become objects of especial interest to the conchologist, owing to the zeal with which a few enterprising scientific travellers have lately penetrated into tropical countries in pursuit of them. It is, however, to the productive exertions of Mr. Cuming that we are mainly indebted for the newer and more attractive species. The researches of this ardent naturalist in the arid plains on the west side of the Andes, in the dense woods of West Columbia and Central America, and more recently in the luxuriant open forests of the Philippine Islands, whilst they present an instructive contrast, exceed any result the most sanguine collector could have anticipated. In the dry and barren regions of Western Chili and Peru, the *Bulimi* are mostly small, and of comparatively fragile structure; but in the beautiful islands of the Eastern Archipelago, where climate and vegetation com-